SPECIFICATION

0001- This is the written description of my invention the E Z FLOW Anfo delivery system. This system will be used to deliver the flow of blasting Anfo material to the drilled hole at any blast site.

TITLE OF INVENTION

0002- Title - the E- Z FLOW anfo delivery system. Applicants name – Dennis Perkins. Citizenship of applicant – Born USA. Residence of Applicant – 13420 49th St. Grand Junction, Mich. 49056.

CROSS-REFERENCE TO RELATED APPLICATIONS

0003- Not Applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

0004- Not Applicable

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT APPENDIX

0005- Not Applicable

BACKGROUND OF THE INVENTION

0006- The E-Z Flow system is dedicated to the delivery of an Anfo (ammonium-nitrate) product to a borehole for blasting.

0007- In the past this Anfo has been used as a blasting agent in mining and road construction. Its purposes is to brake away smaller peace's of rock from the main mass of rock for hauling or processing.

0008- When the need came for more production in the blasting field the Anfo was loaded into the blast hole with air. Pressurized tanks were used. These tanks were tanks that were used for sand blasting and painting before. This method of moving Anfo has some very distinct disadvantages. One, pressurized Anfo is very dangerous. Two, whenever H2 O is added to Anfo there is a reaction, there is water in compressed air. Three, this water will cause the Anfo to stick to the sides of these tanks and plug them up. The water will also cause the Anfo to clump together to the point that there is a large mass of Anfo inside the tank. When this happens the tank must be opened for cleaning, this is a major problem because, being a pressure vessel the clean out hole is very small. In some cases the tank must be disassembled for cleaning.

0009- The controls used for pressure regulation and Anfo delivery are very costly and their working life is very short. When one of these control valves fail it is a normal practice to jump around that valve and keep loading. This sometimes causes safety problems. With over twenty years in this field I can say that there are very few Anfo systems working, as they should.

BRIEF SUMMARY OF THE INVENTION

0010- The E-Z Flow Anfo delivery system will have many improvements from the old art of loading Anfo into the blast hole. The system will be inherently safer, easier too work with, less costly, easier to understand for the operator and maintenance people, not Require pressure testing each year, less balky, easier to clean and will conform to any Vehicle for moving the Anfo product to the bore hole site.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWING

0011- This application contains one (1) drawing, Figure 1. With parts lettered A through G. See page (7)

DETAILED DESCRIPTION OF THE INVENTION

0012- Hopper fig. 1 part A. The container that holds the Anfo can be any size or shape. The hopper will be built so as to fit on its respective vehicle for transport to the blast site. This container will be built using ether steel coated with a plastic liner with antistatic properties or 6061 aluminum. The seams will be welded.
The top of this container will have covers on hinges to keep out other debris. Two thirds of the bottom will be sloped at the angle of repose of the Anfo product plus 5% so the container will empty itself when being used.

0013- Control Chamber fig.1 part B. The control chamber is a rectangular tube capped at each end and fixed to the bottom of the hopper. This chamber has holes along it's sides to allow the Anfo product to be drawn to the inside of this chamber and then moved to the suction end of the chamber for lifting to the venturi for delivery to the blast hole. This chamber will be built using aluminum and will have an electrical continuity with the hopper to discharge any static electrical charge generated from the movement of the Anfo product inside the hopper. The vacuum generated by the venturi will be controlled inside of this chamber by a stand pipe fig.1 part F. This stand pipe is built with ½" schedule 40 pipe will be above the top edge of the hopper with the control valve open to the ambient air. This will regulate the amount of Anfo product available to the venturi fig.1 part C. And the staging area fig. 1 part G

0014- Venturi fig.1 part C. The venturi is made from a 2"X2"X1 ½" TEE. The lift tube is threaded into the bottom of this TEE, The lift tube is made from schedule 40 pipe and it is long enough so the venturi is above the hopper. The nozzle in this venturi is made so it can slide in and out of the cone shape of the venturi to help regulate the vacuum produced by the venturi. The venturi is the heart of this system. The cone shaped tube and the nozzle together comprise the complete venturi.

0015- Adjustable Venturi fig.1 part C. The air control valve fig.1 part E. will control the amount of compressed air feed into the venturi. This airflow and the pressure supplied from outside this system will be used to regulate the vacuum generated inside the venturi. Pulling the Anfo product up the standpipe, into the staging area fig.1 part G ,and at the same time regulating the speed that this product is sent out of the delivery hose. This will also suspend the Anfo product in a column of air for movement to the blast hole. This will insure the correct packing of the Anfo product in the drilled blast hole.